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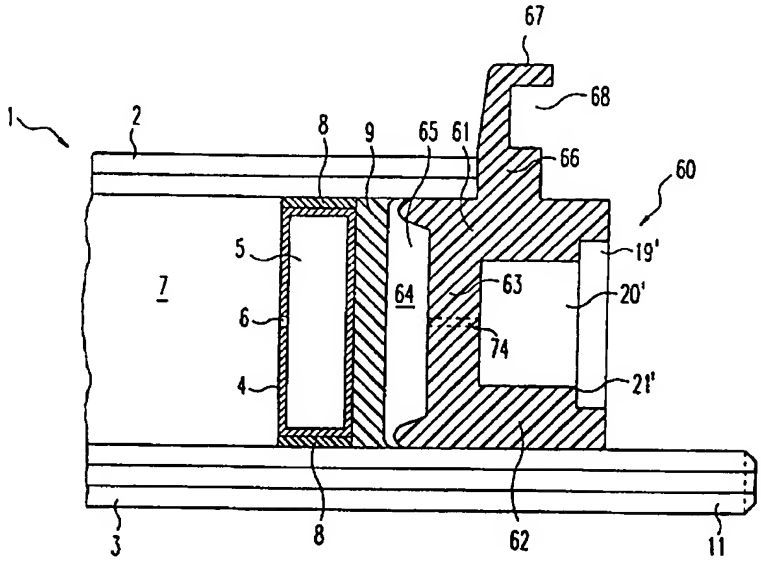
(54) **DISPOSITIF A BATTANT, SANS CADRE, D'UNE PORTE OU D'UNE CROISEE A VITRAGE ISOLANT, ET SON PROCEDE EN FABRICATION**

(54) **FRAMELESS DOOR OR WINDOW WING ARRANGEMENT WITH INSULATED GLAZING, AND PROCESS FOR THE MANUFACTURE THEREOF**



(57) L'invention concerne un dispositif à battant, sans cadre, d'une porte d'une croisée à vitrage isolant, dans lequel, à partir de la construction courante d'un vitrage isolant, un profilé en "U", ouvert vers l'extérieur (10), de préférence en matière plastique, est encastré, séparément de l'espaceur habituel (4), dans le garnissage habituel en

(57) The invention relates to a frameless door, or door or window wing arrangement with insulated glazing. From the conventional structure of insulated glazing a preferably plastic section (10) open externally and having a U-shape is embedded, when separated from the conventional spacer (4), in the conventional edge filling

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bordure (9) ou est appliqué (60, 80) de manière à ménager un espace d'air (64). Le profilé (10; 60; 80) est utilisée pour le positionnement d'une garniture pivotante/basculante de type commercial. De cette manière, l'étanchéité requise de l'intervalle du vitrage est garantie vers l'extérieur. Avantageusement, on utilise un verre de sécurité trempé et on prévoit un émaillage (23) ou un revêtement analogue en bordure, pour le recouvrement des espaceurs (4), du garnissage en bordure (9), de l'espace d'air (64) et du profilé (10, 60, 80). On prévoit également avantageusement un agencement étanche contre la surface frontale périphérique (27) du vitrage extérieur (2).

(9) or is attached (60, 80) in such a manner that an air space (64) remains. The section (10; 60; 80) is used to hold a commercially-available turning/ tilting fitting. The required tightness of the intermediate pane space (7) is consequently ensured externally. Using single-pane toughened safety glass and providing enamel (23) or a similar covering in the edge region to cover the spacers (4), edge filling (9), air space (64) and the section (10, 60, 80) is advantageous, as is a sealing system against the surrounding front surface (27) of the external glass pane (2).

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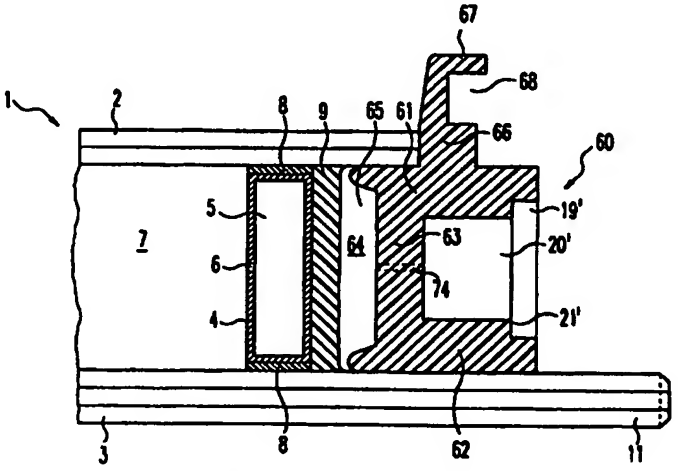
Vor Ablauf der für Änderungen der Ansprüche zugelassenen Frist. Veröffentlichung wird wiederholt falls Änderungen eintreffen.

(54) Title: FRAMELESS DOOR OR WINDOW WING ARRANGEMENT WITH INSULATED GLAZING, AND PROCESS FOR THE MANUFACTURE THEREOF

(54) Bezeichnung: RAHMENLOSE TÜR- ODER FENSTERFLÜGELANORDNUNG MIT ISOLIERVERGLASUNG SOWIE VERFAHREN ZU DEREN HERSTELLUNG

(57) Abstract

The invention relates to a frameless door, or door or window wing arrangement with insulated glazing. From the conventional structure of insulated glazing a preferably plastic section (10) open externally and having a U-shape is embedded, when separated from the conventional spacer (4), in the conventional edge filling (9) or is attached (60, 80) in such a manner that an air space (64) remains. The section (10; 60; 80) is used to hold a commercially-available turning/ tilting fitting. The required tightness of the intermediate pane space (7) is consequently ensured externally. Using single-pane toughened safety glass and providing enamel (23) or a similar covering in the edge region to cover the spacers (4), edge filling (9), air space (64) and the section (10, 60, 80) is advantageous, as is a sealing system against the surrounding front surface (27) of the external glass pane (2).



(57) Zusammenfassung

Bei einer rahmenlosen Tür- oder Fensterflügelanordnung mit Isolierverglasung wird ausgehend von dem üblichen Aufbau einer Isolierverglasung getrennt von dem üblichen Abstandshalter (4) in die übliche Randverfüllung (9) ein vorzugsweise aus Kunststoff bestehendes U-förmiges nach außen offenes Profil (10) eingebettet oder derart (60, 80) angebracht, daß ein Luftraum (64) verbleibt. Das Profil (10; 60; 80) dient zur Aufnahme eines handelsüblichen Dreh-/Kipp-Beschlages. Hierdurch wird die erforderliche Dichtheit des Scheibenzwischenraums (7) nach außen gewährleistet. Vorteilhaft ist die Verwendung von Einscheibensicherheitsglas und das Vorsehen einer Emaillierung (23) oder ähnlichen Abdeckung im Randbereich zum Abdecken von Abstandshaltern (4), Randverfüllung (9), Luftraum (64) und Profil (10, 60, 80). Eine abdichtende Anlage gegen die umlaufende Stirnseite (27) der außenliegenden Glasscheibe (2) ist vorteilhaft.

FRAMELESS DOOR OR WINDOW CASEMENT ARRANGEMENT WITH INSULATED GLAZING, AND PROCESS FOR THE MANUFACTURE THEREOF

The present invention relates to a frameless door or window casement arrangement with insulated glazing.

Usual door and window casement arrangements consist, essentially, of a door or, respectively a window frame in which there is inserted a plate arrangement. The window frames also support the fittings by means of which the arrangement is insertable in a usual mating frame (door jamb or respectively, a window jamb or frame) and is adapted to be pivotable therein and closeable relative thereto. In particular, there are also known socalled turning/tilting fittings, by means of which the window or door casing arrangement can be pivoted or tilted relative to the mating frame in accordance with the position of an actuating handle, whereby in a third position of the actuating handle, by means of the fitting there can be achieved a fixed latching in the mating frame, as a result of which there is achieved a sealed condition with respect to the exterior through the utilization of encompassing seals. Usually, there are

furthermore also employed socalled insulated glazings for this purpose. With regard to the term insulated glazing there is to be understood a plate arrangement consisting of at least two glass plates which are retained at a spacing relative to each other, in which there is gas tightly glued in any encompassing socalled spacer, whereby through a rim filling, in general a Thiokol mass, there is achieved a further sealing with regard to the exterior. The spacer contains mostly a moisture-absorbent material, in order to absorb moisture from the tightly closed off plate interspace which is present between the two plates and the spacer. This plate interspace can be evacuated, however, it can also be filled with specified gas mixtures. The glass surfaces can be equipped with heat protective, sound protective and/or radiation protective coatings.

For door arrangements, for example, such as those which are known for sports installations (socalled squash courts), there are already employed single plate glazings without frames. The fittings which are required for the rotational movement of the glazing are clamped thereto or screwed thereon by means of bore holes. In the event that rails are to be attached along the edge,

it is also possible to provide for lift fitting arrangements, which, in any event, will again impart a frame-like character.

Due to reasons of configurations it is a wish to also be able to create frameless door and window casement arrangements which contain an insulated glazing.

For this purpose, proposals have already been made. The German Publication DE-AS-1212274 discloses an arrangement in which the inwardly located glass plate possesses a peripherally extending edge projection relative to the exteriorly located glass plate, whereby there is contemplated a purely rotary fitting which is either glued thereon or clamped thereto, and essentially on the projection. This arrangement does not permit the utilization of a turning/tilting fitting.

The German Publication DE-U1-9304381 discloses an arrangement with a spacer which is glued together with both glass plates and carries a peripheral groove in its outwardly facing section, which serves for the receipt of a fitting, especially a turning/tilting fitting. The German DE-A1-4343521 from which there commences the

preamble portion of claim 1, discloses a basically similar arrangement in which the spacer is extended rearwardly in such a manner that there is formed an encompassing U-shaped recess, which closes off in a generally close fit with the exteriorly located plate and which serves for the receipt of the turning/tilting fitting. Also in this case is the spacer adhesively glued between the two glass plates.

As has been indicated, such configured kinds if casements arrangements do not satisfy the above- mentioned wish. An important factor resides in that the interspace between the plates of the insulated glazing must remain gas-tightly sealed with respect to the exterior even over lengthier periods of use. Even when one proceeds from the aspect that merely the utilization of a glueing of the spacer without an edge filling may lead to a sealed closure of the plate interspace over lengthier periods of time, which according to current knowledge could be achieved only with extreme difficulties, the forces which are exerted during the specified actuation of the fittings are such that already within a short period of time, there is no longer provided the sealing condition. Furthermore, the loads under certain conditions are also so high that the glass edge will

splinter, which is similarly undesired. A further disadvantage is that the adhesive is exposed to environmental influences, especially to sun rays, as a result of which there is encountered an intense ageing which again, in turn, leads to embrittlement and thereby to loss in sealing ability. Finally, it must be notes that the coloration which may be necessary due to technological reasons for the adhesive connection and for the spacer can lead to significant adverse aesthetic influences. Moreover the edge of the adhesive connection which is in general visible through the glass plate is not configured quite linearly, which is also undesired due to aesthetic reasons.

Accordingly, it is an object of the invention to provide a frameless door or window casement arrangement with insulated glazing which will fulfill the practical demands.

The object is solved by the features of claim 1, claim 4 and, respectively, claim 36. The invention is further embodied by the features of the subclaims. The basic concept of the first embodiment of the invention lies in the recognition, that a profile embedded in the usual edge fitting, which is, independent of the spacer, is capable of assuming the forces encountered at a specified use of the

fitting without disrupting the sealing ability. Thereby, it is also essential that use can be made of the industrial experience over the interim of many years in the manufacture of insulated glazings, without any restrictions.

The basic concept of the second embodiment of the invention is in an arrangement, in which a profile, which is similarly independent of the spacer, if inserted between the glass plates whereby; however, this profile is located at a distance from the spacer between the glass, plates, especially glued in, that there remains an air space at the usual elastic edge filling between itself and by the insulated glazing. This will counteract the danger, that because of the air closure of the edge filing, usually Thiokol, the letter becomes brittle and the sealing capability of the insulated glazing is no longer afforded towards the exterior. However, when inventively there remains this hollow space or air space, than the edge filling is aerated, as a result of which there is avoided the mentioned danger. Hereby it is also important that there can be used the industrial which has been employed in the interim for many years in the manufacturer of insulated glazings, with the single restriction that, outside of the edge

filling, there must remain sufficient space between the glass plates so that there can be inserted the profile.

Pursuant to a further aspect of the present invention, the profile incorporates channels in its longitudinal arms and/or its transverse arms, into which metal rods may be inserted or embedded whereby, as required, in at least a few of the channel sections there can be received screws. These metal rods are expansion-restrictive elements, as a result of which there can be avoided different expansions of the glass plate and profile section during temperature changes.

Pursuant to a further aspect of the present invention, metal strips are applied on the outwardly facing surfaces of the arms of the profile element, in a manner such that the glass plate contacts at least against the metal strips.

Moreover, this also serves the purpose of compensating for fluctuations in the expansion during temperature loading between the glass and material of the profile, which usually consists of plastic material, whereby these metal strips are also carriers for the

adhesive, which achieves the connection between the glass plates and the profile element.

When, pursuant to a modification, the profile element of the present invention is merely fixedly connected with the encompassing side edge projection of the inwardly located glass plate, especially glued thereto and merely supports itself against the surrounding edge of the exteriorly located glass plate, even when sealed, then special conditions in the manufacture of the insulated glazing need not be considered. This can relate to mass-produced items, in which there is then additionally applied the inventively formed profile element. It has been ascertained that an extremely good fixed connection is attainable between the profile element and the inwardly located glass plate which withstands the mechanical loads which are caused by the receipt and the actuation of a fitting in the profile element.

The invention is for the remainder elucidated by the features of the systems.

The utilization of connecting plate glass and especially of single-plate safety glass for at least the inwardly located glass plate, allows for further additional improvements. In particular there can be created in a light-impervious covering which extends about the edges, which in its extend is extremely precisely manufacturable and which facilitates the covering of the unavoidable manufacturing imprecisions encountered during manufacture of the insulated glazing. Furthermore, it is possible to provide for an aesthetically attractive colored configuration, without having to change the external surface of the glass plate. Finally, it is possible more simply for especially a single-plate safety glass to provide bore holes which are adapted for the receipt of the actuating elements of the fitting. In particular, with single-plate safety glass there can be employed decorative capabilities which are merely known in the artistic sector, namely especially an enameling along the edge region which affords, on the one hand a good adhesive background for the glue adhesive material and the edge filling mass, and on the other hand, which will not adversely influence the sealing capability and strength.

Finally, through a suitable association of lip seals there can be achieved a secure sealing toward the exterior of the casement arrangement which is inserted into the mating frame even under extensive weathering.

The inventive process for the manufacture of a door or window casement arrangement with insulated glazing pursuant to the first embodiment utilizes most extensively known process steps, whereby merely another sequence of steps is required, and for an artistic working of float glass, known enameling can be industrially implemented.

The invention is now explained more closely on the basis of the accompanying drawings illustrating examples of embodiments, in which;

Figure 1 illustrates schematically in sectional the edge region of an inventive frameless door or respectively, window casement arrangement with insulated glazing pursuant to the first embodiment;

Figure 2 illustrates schematically a plan view of such a casement arrangement;

Figures 3 through 6 illustrates schematically the arrangement and association of an inventive casement arrangement in a condition while inserted into a mating frame;

Figure 7 illustrates schematically a formation of a glass plate in the shape of a luminated glass plate;

Figure 8 illustrates schematically in section the edge region of an invention frameless door or, respectively, window casement arrangement with insulated glazing pursuant to the second embodiment;

Figure 9 illustrates schematically a plan view of such a casement arrangement;

Figure 10 illustrates schematically in section the edge region of a further inventive frameless door or respectively, window casement arrangement with insulated glazing;

Figure 11 illustrates skidmatically in section the edge region of a still further inventive frameless

door or, respectively, window casement arrangement with insulated glazing;

Figure 12 illustrates skidmatically in section the edge region of a further inventive frameless door or, respectively, window casing arrangement with insulated glazing.

Figure 1 illustrates an inventive door or window casing arrangement 1, which is constructed in accordance with the principle of an insulated glazing. Accordingly, it is provided with an externally located glass plate 2, an inwardly located glass plate 3 and a spacer 4. The spacer 4 is of commercially usual constructional type and consists of a hollow profile element of rectangular cross-section, in the inner space 5 of which there can be received a moisture-absorbent material, whereby the inner space 5 stands in connection with the plate interspace 7 through small bore holes 6.

As is usual with insulated glazings, the spacer 4 by means of a silicon or butyl adhesive strips 8 at a small distance from the outer edges of the glass plates 2 and 3, is inserted between the latter. Thereby, formed

is an encompassing surrounding edge joint, such as is usual for insulated glazings, which is provided with an edge filling 9, which usually consists of Thiokol. Thus, the interspace 7 between the plates is sealed with respect to the exterior in a gas and moisture-sealed type manner. The plate interspace 7, as is known per se, can be filled with a gas or (partially) evacuated.

Pursuant to the first embodiment of the invention in the edge filling 9 there is embedded a profile element which is separated from the spacer 4, which possesses an essentially U-shaped cross-section and which is open towards the outside and which serves for the receipt of a fitting, especially a turning/tilting fitting of a usual type of construction. Furthermore, the inwardly located glass plate 3 possesses a surrounding edge projection 11 opposite the externally located glass plate 2.

The profile element 10 evidences in cross-section an outwardly located arm 12 and an inwardly located arm 13, which extend essentially in parallel with the glass plates 2 or respectively 3; however, which possess a small spacing so that there can be implemented

the embedding into the edge filling 9. The connecting or cross arm 14, which due to manufacturing reasons can possess a hollow space 15, can incorporate ridges 16 on the outside which faces towards the spacer, and which affords an improved embedding. Both arms 12 and 13 support themselves by means of small beads 17 or respectively 18, essentially linearly on the associated glass plate 2 or respectively 3, whereby this support is effected essentially at the end of the arms 12 or respectively 13, which are distant from the plate interspace 7, as is illustrated. This will not only avoid that during the embedding, the mass of the edge filling 9 can escape, but also that there is assured a good guidance of the profile element 10 between the plates 2 and 3, and thereby of the fitting which is received in the profile element 10, whereby there are avoided any unnecessary mechanical stresses.

The space between the arms 12, 13 and 14 contains a broader outer section 19 which allows for receiving and guiding the flat section of the fitting, and allows the guidance and a deeper section 20 which is adapted to receive projections of the fittings having larger dimensions which are required for the actuating

elements, without that the movement is disturbed or adversely influenced. The two sections 19, 20 of the space are separated from each other by a shoulder 21.

The hollow space 15 in the transverse arm 14, which is provided due to manufacturing reasons; however, also facilitates that the section which possesses the ridges 16 can elastically deflect in the event that this becomes necessary.

In the illustrated embodiment, the profile element 10 further possesses at the end which is distant from the plate interspace 7 of the externally located arm 12, an outwardly projecting flange 22, which in the embedded position as illustrated comes into contact against the end surface of the externally located glass plate 2. This flange can thus serve as a stop and thereby assure a throughout uniform orientation of the profile element 10 relative to the glass plates 2 and 3.

In the embodiment illustrated in Figure 1, the inwardly located glass plate 3 possesses an enameling 23 which extends about the edge facing towards the plate interspace 7, the width of which is so dimensioned, as

represented, that the spacer 4 and the profile element 10, as well as the edge filling 9 there between are covered.

It has been indicated that such type of covering, such as the enameling 23, in its edge region can be produced extremely precisely, which is not afforded for the positioning of the silicon or butyl strips 8, so that there can be achieved an aesthetically clean closure. Furthermore, this enameling 23 renders the glass in this region opaque and/or colored in a particular manner. This enameling 23 is a special glass technological treatment which requires a heat etching procedure. Heretofore this was only known with artistic work. However, as indicated, notwithstanding the enameling 23 there is achieved a very good adhesive base for the silicon or, respectively, butyl strips 8, and also for the edge filling 9, so that gas tight and liquid tight closure is continued to be afforded for the plate interspace 7.

Good results with the enameling 23 could heretofore only be achieved for single-plate safety glass. The employment of single-plate safety glass has

additionally the advantage that the through-openings which are required for the actuating elements of the fitting can be applied in a simple and secure manner.

Figure 2 illustrates the arrangement of such through bores, whereby this relates to a middle somewhat larger bore 24 for the through passage of the actuating element, and to neighboring somewhat smaller bores 25 for the fastening elements of the actuating member. Further bores are not required in accordance with the present state of the technology for turning/tilting fittings. Single-plate safety glass has also the further advantage that the edges can be very good polished (held,) whereby the danger of injury is extensively avoided. Moreover, there is also quite reduced the danger of any glass splinters.

The advantages of such a frameless door or window casement arrangement with insulated glazing are apparent. Besides all advantages of an insulated glazing there is achieved an extremely high light through-flow. Furthermore, it is easy to take care of the arrangement. In contrast with a usual framed window, there is no presence of any corners or edges, which facilitates

cleaning. Furthermore, it is possible to have a free color selection, especially for an enameling 23. The servicing is unchanged with regard to usual framed windows, inasmuch as identical turning/tilting fittings can be employed. Architecturally viewed, for large building surfaces, the position of fixedly installed glass plates and of casement arrangements which can be opened, can be suitably selected, since the frames are eliminated and also for shutter frames there are no additional requirements to be considered.

Inasmuch as the profile element 10 serves merely for the receipt and guidance of the fitting, it can be constructed in a simple manner as a plastic material profile, for example, in an extrusion process or an injection molding process.

Inasmuch as the plate interspace 7 by means of the spacer 4 is sealingly closed with respect to the exterior, the profile element 10 can be constructed in multiple parts about the circumference of the casing arrangement, whereby at impact locations there need not be considered any high precision. For example, there can be contemplated a construction which, in the

circumferential direction of the casement arrangement, has a C-shaped or inverted C-shaped configuration, such as is elucidated, for example, with regard to Figure 2. The two profile parts 10A and 10B are arranged as so as contact each other by means of contact joints 26. The position of the contact joints 26 and their width thereby so determined, that any mass of the edge filling 9 which is escapes during embedding will not have any influence during the movement of the fitting in the space 19 or, respectively, occasionally also in the space 20. Also in this instance can the hollow space 15 in the transverse arm 14 be of significance. This facilitates also the embedding since during the embedding, the displaced air can escape in a simple manner. Naturally it is also possible to have a multi-part construction of the profile element 10, and the contact joints 26 can also be provided at the corners (not shown in detail).

On the basis of Figures 3 through 6 there are described here below different embodiments with presently association to a mating frame 30, whereby the same reference numerals as in Figure 1 designate the same components, and whereby merely deviations therefrom are elucidated.

Furthermore, it is to be noted that, for example, in the profile element 10, the hollow space 15 and the ridges 16 are not particularly illustrated. Naturally, these can be present in the shape as in Figure 1 or in similar form. Furthermore, there is not illustrated in detail, that the beads 17 and 18 (Figure 1) can inclines indicate which are of assistance in the manufacturing technology. In this connection, it is to be mentioned that the profile element 10 need not be necessarily a plastic material profile, but can also be constituted of another suitable material; for example, aluminum, when this is suitable for a particularly case of utilization.

Furthermore, it is also again to be mentioned that in none of the figures is there illustrated the commercially usual fitting.

Quite in general is the casement arrangement 1 inserted into a mating frame 30, whereby there is only represented the closed position, in which the fitting which is received in the profile element 10, through engaging means (not shown) is engaged in suitable grooves 31 in the mating frame 30, as is known per se.

The mating frame 30 is fixable anchored in the building in a known manner which is not illustrated in detail. In Figures 3 and 4, the mating frame 30 is formed by a socalled thermally separated aluminum profile, meaning, through an inner in a profile 32, heat-isolating connecting elements 33, 34, and an external covering profile element 35. The covering profile element 35 projects ahead relative to the closing window or door opening in such a manner, that in the closed condition of the casement arrangement 1 the edge region thereof comes into a sealing contact against the covering profile element 35 by means of a sealing element. In Figures 3 and 4, the element of the covering profile 35 which projects the furthest into the window opening and comes closest to the casement arrangement 1, carries a lip seal 36. The position of this lip seal 36 in the exemplary embodiment is such that, viewed from the outside, through the lip seal 36 and the covering profile element 35, there is covered the region of the externally located glass plate 32 of the casement arrangement 1, which is associated with the spacer 4, the edge filling 9 and the profile element 10. A covering, such as the enameling 23 represents for the inwardly located glass plate 3 (Figures 1 and 2), is thereby not necessary in

this region. For another configuration of the association of lip seal 36 and the covering profile 35 with regard to the casement arrangement 1, there can; however, be also provided for the externally located plate 2, a covering which corresponds to the enameling 23 (not shown).

Pursuant to Figure 3, at a portion of the covering profile 35 which is proximate to a building, there is retained a further lip seal 37, whose lip comes into contact against a portion of the profile 10. In this exemplary embodiment, the flange 22 is not provided at the outermost end of the outwardly located arm 12 which is distant from the plate interspace 7, but evidences a certain spacing, through which there is defined a support surface 38 on the profile 10, against which lip seal 37 comes into contact when the casement arrangement 1 is in the closed condition. Figure 3 also provides indications with regard to the dimensioning of the projection 11 of the inwardly located glass plate 3. This projection is to be so dimensioned that at an open casement arrangement 1, the elements of the fitting which project away from the plate interspace 7 will not be disruptive, especially will not be visible in the closed

condition of the casement arrangement 1; however, the engagement thereof upon actuation will be afforded into the groove 31 of the actuating element(not shown).

In the embodiment pursuant to Figure 3, the covering profile 35 is further so configured that between the outwardly located lip seal 36 and the inwardly located lip seal 37 there is the defined a hollow space 39 in which, notwithstanding the lip 36, any penetrated water can run off and, when required, can be outwardly through openings.

Figure 4 illustrates in contrast a somewhat modified arrangement and construction of the second lip seal, which is here identified by reference numeral 40 and which possess a 41 coming into contact against the outwardly located glass plate 2, and a second lip 42 which comes into contact with an end surface of the profile 10. Besides the hollow space 39, there is accordingly defined between the lips 41 and 42 a further hollow space 43, which can similarly serve for the receipt of water which has penetrated notwithstanding all previous sealing measures.

Figure 5 distinguishes itself from Figures 3 and 4, in that the mating frame 30 is formed by a wood or plastic material profile element 44, in which there is inserted a further configured lip seal 45 which is comparably slightly different from lip seal 36 and a further slightly modified lip seal comparable with lip seal 40. Figure 6 illustrates thus similarly a wood or plastic material profile 47 for the mating frame, whereby this profile 47 is; however, covered on the outside by further metal profile 48 such as an aluminum profile, which carries the lip seal 36, whereas the lip seal 46 as heretofore is inserted into the wood or plastic material profile 47. It has been indicated that the inventive casement arrangement 1 is insertable into mating frames 30 of the most differently configured shapes, whereas through the casement arrangement 1 there can be achieved basically required aesthetic effects, without neglecting the sealing.

On the basis of Figure 1 there is explained that the enameling 23 produces an optical covering, whereby there is concurrently afforded a good adherence for the silicon or, respectively, butyl strips 80, as well as for the edge filling 9. This can also be

achieved in a different manner, for example, in a laminated glass plate arrangement 50 pursuant to Figure 7. This consist of (at least) two glass plates 51 and 52 between which there is layered laminate-like a transparent plastic foil 53. This plastic foil 53 is at the edge thereof either rendered opaque through a treatment or replaced by an opaque; or for example, colored foil 54, whereby the same effect is achieved as would be by means of enameling 23. Understandably, in this region there can also be carried out a treatment of one of the glass plates 51 or 52 in order to achieve the same effect. It is important, as mentioned, that the optical covering of the region in which there are located the spacer 4, the edge filling 9, and the profile 10, are under the concurrent maintenance of the adherability with respect to the edge filling 9 and the silicon or, respectively, butyl strips 8. Understandably, it is also possible to provide combinations of laminated glass plate arrangements and single-plate safety glass arrangements.

As already mentioned, the plate interspace 7 is fillable with a gas or evacuatable, as is usual. It is further usual to undertake in the glass interspace 7 coatings of the glass plates 2, 3 in order to achieve a

heat protective, sound protective and/or radiation protective effect (against UV or IR radiation). Coating materials, layered constructions and methods for producing such layers are basically known in many modes.

During the manufacture of insulated glazings with the utilization of coated glass plates, there is usually cut to size a coated float-glass plate, freed along the edge there of from the coating and then conducted to the assembly. This in any event, is not possible when there should be produced an inventive casement arrangement 1, which contains an enameling 23 or a comparable surface treatment of one of the glass plates 2 and/or 3, or in which there is employed a material which requires a special treatment; for example, single plate-safety glass.

Furthermore, during embedding of the profile 10 into the edge filling 9 there must be taken care that the this embedding is effected as long as the material which is employed for the edge filling 9 and the already filled in material is still deformable, possesses at least a viscous consistency. In accordance therewith, the known,

usual process for producing insulated glazings in specified steps must be modified and changed.

Initially, the glass plates 2 and 3 are to be cut to size in their dimensions, commencing from a usual float-glass plate. Thereafter, the mentioned openings 24 and 25 are forwarded and enameling 23 is to be undertaken. In order that the enameling 23 penetrates into the glass material of the glass plate 2 or, respectively 3, and achieves the necessary adhesive base, the enameling 23 is to be burnt in within the scope of a heat treatment. Inasmuch as enameling 23 in accordance with the present state of the technology is only durable for singe-plate safety glass, the necessary heat treatment which is employed for the production of the single-plate safety glass is to be implemented concurrently or at a different separate time.

In the event that the glass plates 2 and/or 3 are to be coated, then the coating procedure is to be implemented, whereby subsequent to the coating procedure, the region in which there are to be provided the spacer 4, the profile element 10 and the edge filling 9, is to be freed from the coating, or again freed there-from.

Thereafter, in a usual manner, such as is known for insulated glazings, there is implemented the assembly, meaning, the spacer 4 is provided with the silicon or butyl strips 8 and inserted between the plates 2 and 3 at the intended locations. Thereafter, there is implemented the edge filling, which is usually effected with Thiokol. Prior to the Thiokol edge filling 9 reaches its cured elastic condition and is still viscous, the profile 10 is embedded through pressing into the edge filling 9. Only then are there undertaken the necessary steps, such that the edge filling 9 is imparted the necessary solid yet elastic consistency.

The commercial usual turning/tilting fitting can then be inserted and mounted together with the associated actuating elements, for which there are provided the bores 24 and 25. Thereby, it is necessary that at least the bore 24 is extended through the profile 10 insofar as during the preparation of individual profile parts (for example, 10a and 10b) at suitable locations. At this time, the casement arrangement 1 can then be inserted into the window opening or respectively, into the mating frame 30 thereof, in the usual manner and is in readiness for operation.

In the following description of a second embodiment as well as of further exemplary embodiment, to the extent possible the same reference numerals are used as in Figures 1 through 7, whereby in the same effect there is provided a dash to the reference numerals.

Pursuant to the second embodiment in accordance with Figures 8 through 11, at a spacing from the edge filling 9 between the glass plates 2 and 3, there is inserted a profile element 60 which is separate from the spacer 4, in which possesses an essentially U-shaped cross-section and which is open towards the exterior, and serves for the receipt of a fitting, especially a turning/tilting fitting of usual type of construction. Furthermore, the inwardly located glass plate 3 possesses a peripherally extending edge projection 11 relative to the externally located glass plate 2, whereby this relates inwardly located and outwardly located, to the position of the door or window casement arrangement 1 in a condition as installed into a building. The profile 60 possesses in cross-section an outwardly located arm 61 and an inwardly located arm 62, which extend essentially in parallel with the glass plates 2 or, respectively 3, and through which relative to the profile 60, the

outwardly located surfaces effect the fixed connection to the glass plates 2, or respectively 3, preferably through an adhesive connection. The transverse arm 63 which connects the arms 61, 62 is spaced from the edge filling mass 9 in such a manner that there is formed an air space 64 between edge filling mass 9 and the profile 60. The air space 64 can thereby be further increased, in that the transverse arm 63 relative to the portions of the arms 61 and 62 nearest to the spacer 4 possesses a setback 65. In the transverse arm 63 there can additionally be provided through-opening 74 which facilitate an air exchange with the airspace 64 towards the outside, whereby these through-opening 74 can also serve for the receipt of fastening screws.

Assured hereby is a good guidance of the profile 60 between the glass plates 2 and 3, and namely also of the fitting which is received in the profile 60, whereby there are avoided unnecessary mechanical loads, especially these acting on the spacer 4. Through the provision of the air space 64 and the possibility of an air exchange with the outside there is avoided that the edge filling mass 9 will be embrittled due to

physical and/or chemical reactions, and thereby looses its sealing effectiveness.

The space between the arms 61, 62 and 63 contains a wider outer section 19', which enables the receiving of and guidance of the sections of the fitting, and a deeper section 20' which facilitates receiving projections of the fitting of larger dimensions which are required for the actuating elements, without that the movement is disturbed and adversely influenced. The two sections 19' and 20' of the space are separated from each other by means of a shoulder 21'.

In the illustrated exemplary embodiments, the profile 60, at the end of the outwardly located arm 61 which is remote from the plate interspace 7, possesses an outwardly projecting flange 66, which in the inserted condition, as illustrated, comes into contact against the end surface of the externally located glass plate 2. This rim 66 can therefore serve as a stop and thus ensure a throughout uniform orientation of the profile 60 relative to the glass plates 2 and 3.

As illustrated in Figure 8 not in detail, however, shown in Figure 9, in this embodiment the inwardly located glass plate 3 can also possess an enameling 23 extending about its edge, which faces towards the plate interspace 7, whose width is so dimensioned, that as illustrated in Figure 9, there is covered the spacer 4 and the profile 60, as well as the there between located edge filling 9 and the air space 64.

It must be further mentioned that the profile 60 need not necessarily be a plastic material profile, but can also consist of another suitable material, for example, aluminum, as is expedient for a particular instance of utilization.

The association of an inventive casement arrangement with a mating frame is already extensively explained with regard to preceding Figures 3 through 6. Accordingly, reference is made expressly to these explanations.

Therein, among other aspects, as already pointed out, the sealing effect with regard to water

toward the exterior is of great significance. An addition to the improvement of the sealing effect against water towards the exterior is achieved in that the flange 66 possesses an outwardly extending projection 67, whereby the latter can possess a generally U-shaped recess 68 which is open in the circumferential direction. Hereby, there is facilitated the contact of further lip seals which are fastened in the mating frame, additional obstruction to weather-caused inflowing penetration of water.

Furthermore, it is pointed out that instead of the covering which is formed by enameling 23 there can also be employed the covering as is extensively described in Figure 7. Hereby, there is similarly made specific reference to these explanations.

In the manufacture of the casement arrangement 1 pursuant to this embodiment of the invention, care must be taken that the edge filling 9 is already solidified to such an extent that during the insertion of the profile 60 the edge filling 9 can no longer flow. For the remainder, reference made be had to the known usual process for the manufacturing of insulated glazings.

During use there can be encountered significant temperature fluctuations which, when the differences in the expansion between the glass of the plates 2 and 3, on the one hand, and of the material of the profile 60, on the other hand, is so excessively large can lead to difficulties. This can generate stresses which no longer allow for the secure handling of the fitting, or through which is no longer afforded the retention of the profile 60 between the glass plates 2 and 3.

The inventive solution of this problem is applicable to the profile 60 pursuant to Figure 8, as well as to the profile 10 pursuant to Figure 1. However, this solution is merely explained further on the basis of the modifications of profile 60.

In accordance with the embodiment illustrated in Figure 10, the profile 60 possess channels 59 or respectively 70 in its arms 61, 62 and/or in its transverse arm 63, into which there can be inserted or embedded metal rods 75 or 76. These channels can, however, also be employed for the receipt of screws for the fastening of the fittings, possibly additionally to

or alternatingly with such metal rods 75 or, respectively 76.

In the embodiment illustrated in Figure 11, metal strips 71 or, respectively 72, are fixedly attached to the toward the outwardly facing surfaces of the arms 61, 62 of the profile 60, in such a manner that the glass plate 2, 3, comes at least into contact with the metal strips 71, 72.

The measure according to Figure 7 can additionally achieve that the fixed connection between the profile 60 and the glass plate 2,3 is maintained through adhesives also under intense temperature differences, such as may be encountered in actual practice, in that there is selected a material for the metal strips 71, 72 which is better suited as a support for the adhesive than the material of the profile 60 itself. Of particular advantage is aluminum or aluminum alloy.

The metal strips 71, 72 can be inserted through suitable measures together with the manufacture of the profile 60, especially by being molded therein. This can; for example, be carried out by means of anchored

projections, such as for example, the projection 73 of the strip 72 in the arm 62 of the profile 60.

However, other projections can be employed for this purpose, such as the longitudinal extension of the metal strips 71, 72 having projections or the like arranged distributed thereon.

Finally, there is to be mentioned that the measures according to Figures 10 and the measure according to Figure 11 can be jointly provided.

Figure 12 similarly illustrates an inventive door or window wing arrangement 2 which is constructed in accordance with the principle of an isolated glazing. This construction can be basically applied to a profile pursuant to Figure 1 as well as a profile pursuant to Figure 8.

Pursuant to Figure 12, arranged at a spacing from the edge filling 9 in the region between the glass plates 2 and 3; however outside of the spatial covering, is arranged a profile 80 which is separated from the spacer 4, which possess an essentially U-shaped cross-section and which is open towards the outside and serves

for the receipt of a fitting, especially of a turning/tilting fitting of the usual type of construction. Furthermore, the inwardly located glass plate 3 possesses an encompassing edge projection 11 relative to the exteriorly located glass plate 2, whereby the relates to the inwardly located and outwardly located position of the door or window casement arrangement 1 installed in a building. The profile 80 possesses in cross-section an outwardly located arm 81 in and an inwardly located arm 82, which extend essentially parallel to the glass plates 2 or, respectively 3, whereby the outer surface of the inwardly located arm 82 relative to the profile 80 provides for the fixed connection to only the glass plate 3, preferably through an adhesive connection. The transverse arm 83 which connects the longitudinal arm 81, 82 is spaced from the edge filling mass 9 in this exemplary embodiment in such a manner as to form an airs pace 84 between the edge filling mass 9 and the profile 80. The airspace 84 can hereby be still further increased in that the transverse arm 83 relative to the section of the longitudinal arms 81 and 82 which are closest to the spacer 4 possesses a setback 85. In the transverse arm 82, there can additionally be provided suitable through-openings (not shown), through which there is possible an air exchange

with the airs pace 84 towards the exterior, whereby these through openings can also serve for the receipt of fastening screws.

The profile 80, in contrast with the previously embodiments, however, is not fixedly connected with the externally located glass plate 2, but merely lies sealingly against the latter, especially along its encompassing end surface 27. In the illustrated exemplary embodiment, the transitional region between the outwardly located longitudinal arm 81 and the transverse arm 82 of the profile is formed as a bead or projecting edge 86, whose one surface is opposite the end surface 27 of the externally located glass plate 2. Advantageously the sealing contact is effected through a sealing mass 88 between the bead 86 and the end surface 27 of the externally located glass plate 2.

The bead 86 can be a component of an outwardly projecting flange 87, as has previously been already explained, which in the inserted condition does not only serve as a contact or stop for a uniform orientation of the profile 80 relative to the glass plates 2 and 3, but also serves as a means for conducting off any water which has penetrated due to weathering influences.

The flange 87, can as illustrated further possess an elastic lip 89 which elastically contacts against the outside of the externally located glass plate 2; in effect, proximate the end surface 27.

The space between the arms 81, 82, 83 of the profile 80 contains a wider outer section 19", which can receive and guide the sections of the fitting, and a deeper section 20" for the receipt of larger projections of the fittings which are required for the actuating elements, without that the movement is disturbed or adversely influenced. Both sections 19" and 20" of the thus formed space are separated from each other by a shoulder 21".

Through the selected embodiment there is assured, for one, a good guidance of the profile 80 in the region between the glass plates 2 and 3, but also a good guidance of the fitting which is received in the profile, without that this causes, on the one hand, any unnecessary mechanical loads to set on the spacer 4 and, on the other hand, to the together holding between the glass plates 2 and 3. Through the provision of the air space 84 there is avoided that the edge filling mass 90 will become embrittled due to physical and/or chemical

reactions, and thereby looses its sealing effect, as has been explained hereinabove.

Merely schematically represented is an enameling 23 which is provided on the inwardly located glass plate 3 extending about the edge facing towards the plate interspace 7, and whose width is so dimensioned that the spacer 4 and the profile 80, as well as the in between located edge filler 9 and the air space 84 are covered. The advantage of this a type of covering, such as the enameling 23, is further extensively illustrated hereinabove.

Inasmuch as the profile 80 serves merely for the receipt and guidance of the fitting, it can be constructed in a simple manner as a plastic material profile; for example, in an continuous extrusion process or injection molding process.

The profile 80, about the circumference of the Casement arrangement, can be constructed by a plurality of parts, as further explained hereinabove. It is to be mentioned, that also in Figure 12, the commercially usual fitting is not illustrated.

It can be further mentioned, that the profile 80 need not necessarily be a plastic material profile, but can be constituted of another suitable material, for example aluminum, when this is expedient for a particular case of utilization, especially for the fixed connection with the encompassing rim 11 of the inwardly located glass plate 3.

An addition to the improvement of the sealing ability against water entering from the exterior is achieved by the flange 87 which is constructed as an outwardly projecting protuberance, whereby this can possess a generally U-shaped recess which is again in the circumferential direction. As a result, there is facilitated the contact of further lips of the lip seals of sealing arrangements which are fastened in the mating frame, which also constitutes an additional obstruction to the entry of water caused by weathering conditions.

Furthermore, it should be noted, that instead of the covering which is formed by the enameling 23, there can also be employed the covering which is described extensively with regard to Figure 7.

In the manufacture of an inventive casement arrangement 1 in accordance with this embodiment, there can be made use of insulated glazing which are mass produced, in which a glass plate which is later employed as the inwardly located glass plate possesses a projection 11 along its edge. Expediently, after the edge filling 9 has solidified, the profile 80 is positioned in the region of the projection 11 along the circumference thereof, whereby the transitional region which is formed as a bead 86 comes into contact against the end surface 27 of the externally located glass plate 2; as required, with the interposition of the seal 88.

During use there can be encountered significant temperature fluctuations which, on the one hand, when the differences in the expansion between especially the glass of the glass plate 3, and on the other hand, the material of the profile 80 is too excessive, can lead to difficulties. There can be generated stresses which no longer allow for the secure handling of the fitting, or through which the retention of the profile 80 on the glass plate 3 is no longer afforded.

To that extent there can be basically made use of the measures which are explained with regard to Figures 10 and 11.

In the embodiment illustrated in Figure 12, a metal strip 90 is fixedly attached to the outwardly facing surface of the inwardly located arm 82 of the profile 80, in such a manner that the glass plate 3 by means of its projection 11, comes at least into contact with this metal strip 90. This measure can additionally achieve that the fixed connection between the profile 80 and the glass plate 3 will be maintained through adhesion even under intensive temperature differences, such as are encountered in practice, in that for the metal strip 90 there can be selected a material which is better adapted as a support for the adhesive material than that of the profile 80 itself. Of advantage is, in particular, aluminum or an aluminum alloy.

The metal strip 90 can be inserted or, in particular, cast in through suitable measures during the manufacture of the profile 80. This can be effected effective through anchoring projections, such as for example, the projection 91 on the metal strip 90. Furthermore, there can also be additionally provided a

metal rod, as mentioned further hereinabove, in the transverse arm 83.

It is, however, advantageous to provide a projection of the metal strip 90 than this metal rod 90, which in addition facilitates an anchoring of the metal rail 90 and the body of the profile 80 namely also the region of the transitional region which is formed as the bead 86, as is illustrated. This metal rod 92 can possess through openings (not shown) which facilitates an air exchange with the airspace 84 whereby moreover there can also be received screws in the event that this is required.

In the exemplary there is illustrated that the outwardly located side of the outwardly located longitudinal arm 81 is generally in an alignment with the inwardly located surface of the externally located glass plate 2. This has certain advantages in conjunction with the cooperation of the lip seals which are arranged in the mating frame. However, it is important that also the outwardly located longitudinal arm 81 is sufficiently stable, so that no problems are encountered upon the receipt of the fitting.

There is still to be mentioned that, already in conjunction with the insulated glazings there can be applied known measures for awakening the impression of a lattice window or a bulls-eye-glass in the same manner, whereby additionally there can be made use of the measure of the enameling pursuant also for this purpose.

In total there is created a frameless door or respectively, window casement arrangement, which can afford for practical application the necessarily required sealing capability of the plate interspace 7, whereby in addition, there can be achieved a multiplicity of an aesthetic and architectural effects, and further the secure undisturbed manipulation of the fittings.

CLAIMS

1. Frameless door or window casement arrangement with insulated glazing, consisting of an externally located glass plate (2), an inwardly located glass plate (3) with an encompassing edge projection (11) opposite the externally located glass plate (2), a spacer (4) which is gas-tightly inserted along generally the edge between the inwardly located and externally located glass plate 2 (2,3,) and a similarly generally U-shaped outwardly opening arrangement which along the edge encompasses the spacer and is arranged between the glass plates (2,3,) for receipt of a fitting, whereby actuating elements pass through the inwardly located glass plate 3 through openings and facilitate access to the fitting, characterized in that the arrangement is formed by a profile (10) separated from the spacer (4) which is embedded into a known per se elastic edge filling (9) for insulated glazings.

2. A door or window casement arrangement according to Claim 1, characterized that the profile (10)

is formed to linearly support itself on the glass plates (2,3).

3. A door or window casement arrangement according to Claim 2, characterized in that the profile (10) includes arms (12,13) supporting themselves at the end which is distent from the plate interspace (7).

4. A frameless door or window casement arrangement with insulated glazing, consisting of an externally located glass plate (2), an inwardly located glass plate (3) with a peripheral edge projection (11) opposite the externally located glass plate (2), a spacer (4) which is gas-tightly inserted to extend generally along the edge between the inwardly located and externally located glass (2,3), and a similarly generally U-shaped outwardly opening arrangement encompassing the spacer being located between the glass plates (2,3) for the receipt of a fitting, whereby actuating elements of the inwardly located glass plate (3) pass through openings and facilitate access to the fitting, characterized in that the arrangement is formed by a profile (60; 80) separate from the spacer (4), and is arranged at such a distance from the spacer (4) between the glass plates (2,3), and is in particular glued

therein, so that between the profiles (60; 80) and an elastic edge filling (9) known per se for insulated glazing, there remains an airs pace (64; 84).

5. A door or window casement arrangement according to Claim 4, characterized in that the profile (60) possesses through-openings (74) in a transverse arm (63).

6. A door or window casement arrangement according to Claim 4 or 5, characterized at the profile 60, 8 includes a setback 65, 85 in its transverse arms 63, 83 relative to the section of the arms 61, 62, 81, 82 closest to the spacer 4.

7. A door or window casement arrangement according to one of Claims 1 through 6, characterized that the profile (10; 60; 80) is a plastic material profile.

8. A door or window casement arrangement according to one of Claims 1 through 7, characterized in that the profile (10; 60; 80) on the distant end of the arms (12; 61; 62) associated with the externally locating glass plate (2) possesses an outwardly projecting flange

(66; 87) which in the inserted condition of the profile (10; 60; 80) lies against the end surface of the externally located glass plate (2).

9. A door or window casement arrangement according to one of Claims 1 through 8, characterized in that the depth of the profile (10; 60; 80) is dimensioned so that the projecting part of the fitting which faces towards the plate interspace (7) is received in a contactless manner.

10. A door or window casement arrangement according to one of claims 1 through 9, characterized that the projection (11) between the externally located and inwardly located glass plates (2,3) is dimensioned that in the condition in which it is inserted into a door or window arrangement, the part of the fitting which projects towards the mating frame thereof is undisruptedly receivable, however, facilitates the specified engagement into fitting elements in the mating frame.

11. A door or window casement arrangement according to one of Claims 1 through 3 or 7 through 10, characterized in that the profile (10) is constructed in

multiple parts around the circumference of the door or window casement arrangement (10a; 10b), whereby the separating locations (26) are positioned and dimensioned such that upon embedding any enflowing edge filling mass will not influence the fitting and the actuation thereof.

12. A door or window casement arrangement according to one of Claims 4 through 10, characterized in that the profile (60) is constructed in a multiple parts (60a; 60b) along the circumference of the door or window casement arrangement, whereby the separating location (26') facilitate an air exchange with the air space (64), but are so dimensioned so as not to influence the actuation of the fitting.

13. A door or window casement arrangement according to Claims 11 or 12, characterized through a two-part generally C-shaped configuration.

14. A door or window casement arrangement according to one of Claims 1 through 13, characterized in that the spacer (4) is inserted by means of a silicon or butyl strip (8) and the edge filling 9 consists of Thiokol.

15. A door or window casement arrangement according to one of Claims 1 through 14, characterized in that at least the inwardly located glass plate (3) possesses an edge covering in a region which encompasses the spacer (4) and the profile (10; 60; 80).

16. A door or window casement arrangement according to Claim 15, characterized by a laminated glass plate (50) which has an essentially opaque intermediate layer (54) forming the edge covering.

17. A door or window casement arrangement according to Claim 15, characterized by a single-plate safety glass plate, wherein the edge covering is found through a glass treatment, which affords an adhesive base for the gas-tight insertion of the spacer (4); however which renders the applicable region essentially opaque.

18. A door or window casement arrangement according to Claim 17, characterized by an enameling (23).

19. A door or window casement arrangement according to Claim 18, characterized in that the openings

for the actuating elements comprises bores (24,25) in the region of the enameling (23).

20. A door or window casement arrangement according to one of Claims 1 through 19, characterized in the condition of being inserted into a door or window arrangement, an outside essentially flat covering part (35) of the mating frame (30) of the door or window arrangement covers the region of the externally located glass plate which has the spacer (4) and the profile (10; 60; 80) associated therewith.

21. A door or window casement arrangement according to Claim 20, characterized in that the essentially flat covering portion (35) of the mating frame (30) carries an encompassing lip seal (36,45) wherein it is inserted and in the closed door or window arrangement condition, comes into sealing contact with the externally located glass plate (2).

22. A door or window casement arrangement according to Claim 21, characterized in that the mating frame (30) or the covering portion thereof (35,48) thereof carries a further encompassing lip seal (36,40, 46) which in the inserted end closed condition in the

door or window arrangement, comes into sealing contact at the outer edge of the externally located glass plate (2) and/or an applicable portion (38) the profile (10; 60; 80).

23. A door or window casement arrangement according to Claim 22, characterized in that between the two lip seals (36,37; 36,40) in the region of the covering portion (35) there is formed a hollow space (39) for the receipt and for the conducting off of any penetrated water.

24. A door or window casement arrangement according to one of Claims 8 through 23, referring to claim 8, characterized in that the flange 26 possesses a projecting protrusion (67,68) beyond the outside of the glass plate (2) with a generally U-shaped recess (60) which is open in the circumferential direction.

25. Frameless door or window casement arrangement according to one of Claims 1 through 24, characterized that the profile (80) is fixedly connected with the inwardly located glass plate (3) through its inwardly located positioned longitudinal arm (82), in particular being glued thereto, and in the transitional

region (86) between the transverse arm (83) and the outwardly located positioned longitudinal arm (81) sealing contacts against the encompassing end surface (27) of the externally located glass plate (2).

26. A door or window casement arrangement according to claim 25, characterized by an elastic sealing mass (88) between the transitional region (86) of the profile (80) and the end surface (27) of the externally located glass plate (2).

27. A door or window casement arrangement according to Claim 25 or 26, characterized that the transitional region of the profile (80) is formed as an outwardly projecting bead (86), and the outside of the outwardly located longitudinal arm (81) for the remainder is generally is in alignment with the inner side of the externally located glass plate (2).

28. A door or window casement arrangement according to Claim 27, referring to claim 8, characterized in that the flange (87) projects beyond the transitional region of the bead (86) profile (80).

29. A door or window casement arrangement according to one of Claims 25 through 28, characterized in that the traditional region of the profile (80) possesses an elastic lip (89) which contacts along the edge of the outside of the externally located glass plate (2).

30. A frameless door or window casement arrangement according to one of Claims 1 through 29, characterized in that the profile (10; 60; 80) possesses channels (69,70) in the arms (61,62) and/or the transverse arm (63), in which there are introduceable or embedded metal rods (75; 76; 92) whereby at least a few of the channels (69, 70) can receive screws in portions thereof.

31. A frameless door or window casement arrangement according to one of Claims 1 through 30, characterized in that on the outwardly facing surfaces of the arms (61,62; 81,82) of profiles (60; 80) there are fixedly attached metal strips (71; 72; 90) so that the glass plates (2,3) at least contact against the metal strips (71,72; 90;) however, at least against the outwardly facing surface of the inwardly located arm (82).

32. A door or window casement arrangement according to Claim 31, characterized that the metal strips (71,72; 90) are molded into the material of the profile (60; 80).

33. A door or window casement arrangement according to Claim 31 or 32, characterized in that the surfaces of the metal strips (71,72; 90) which face towards the glass plates (2,3) are the support for an adhesive medium.

34. A door or window casement arrangement according to one of Claims 31 through 33, characterized in that the metal strips (71,72; 90) are constituted of aluminum or an aluminum alloy.

35. A door or window casement arrangement according to Claims 30 and 31 or one of Claims 32 through 34, with reference to Claims 30 and 31, characterized in that the metal rod (92) is integrally constructed with the metal strip (90).

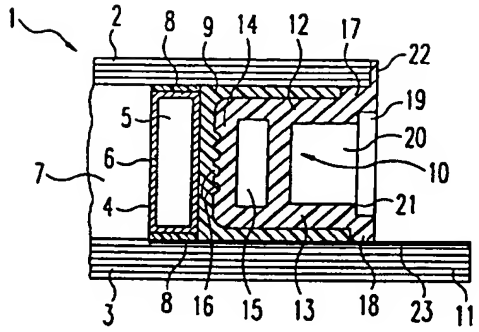
36. A method for the manufacture of a frameless door or window casement arrangement with insulated glazing according to one of Claims 1 through 3,

and 7 through 35, with reference to Claims 1 through 3, with the following steps:

Cutting a float glass plate for the externally located glass plate (2), cutting a float-glass plate for the inwardly located glass plate (3), boring openings (24,25) for the actuating elements of a fitting in an edge region of the float glass-plate for the inwardly located glass plate (3), enameling the edge region of at least the float-glass plate for the inwardly located glass plate (3), heat treating at least the float glass plate for the inwardly located glass plate (3) for the burning in of the enameling (23), effecting a concurrent or separate heat treatment of the at least the float-glass plate for the inwardly located glass plate (3) to form a single-plate safety glass plate, when required coating at least one of the glass plates (2,3) with a heat, sound, and/or radiation protective layer, associating, inserting and assembling and glueing of the two glass plates (2,3,) and a spacer (4) for the insulated glazing in a usual manner, filling in of an edge filling mass for the insulated glazing in a usual manner, pressing the U-shaped profile (10) into the edge filling mass up to contact with an end of an arm (12) context of an end remote from the profile (10) of the outwardly located glass plate (3) towards the outwardly

projecting flange (22) at the end surface of the externally located glass plate (3), curing the edge filling mass until reaching of the elastic end condition thereof, and inserting and mounting the fitting and the actuation elements thereof.

Fig. 1


1
2
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12
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23
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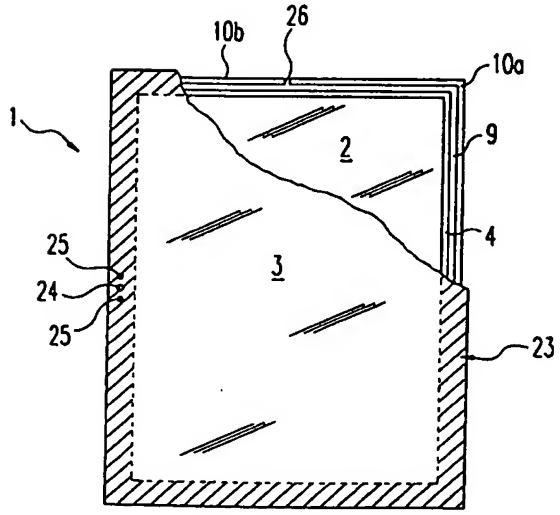
Fig. 2


10b
26
10a
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24
25
23

Fig. 3

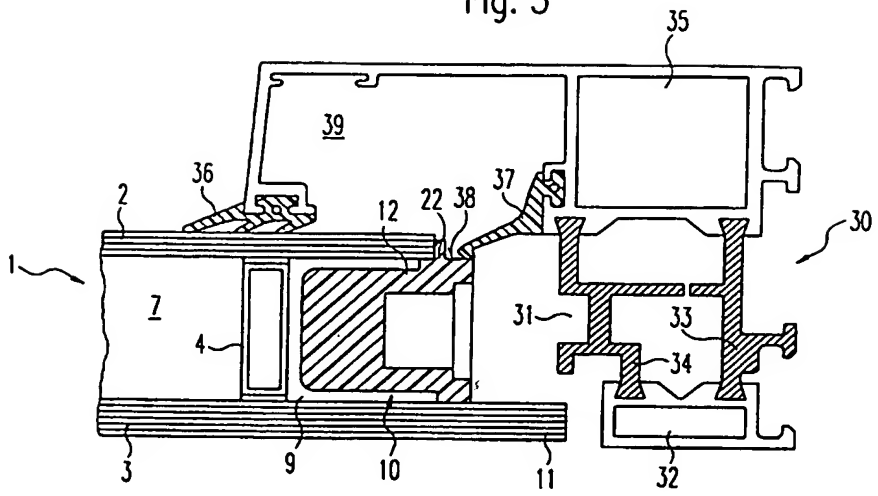
35
39
36
2
12
22
38
37
30
1
7
4
31
33
34
3
9
10
11
32

Fig. 4

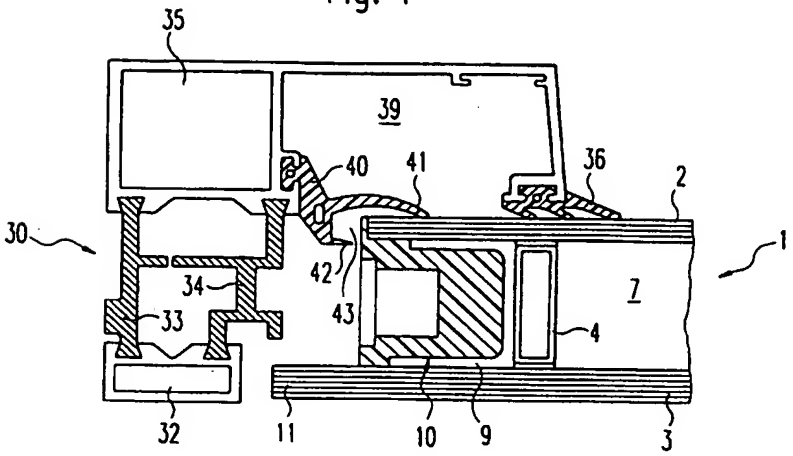
35
39
40
41
36
2
30
1
42
34
43
7
33
4
32
11
10
9
3

Fig. 5

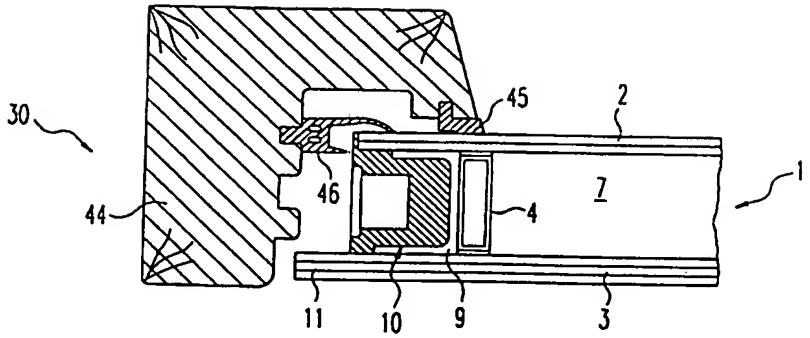

Fig. 6

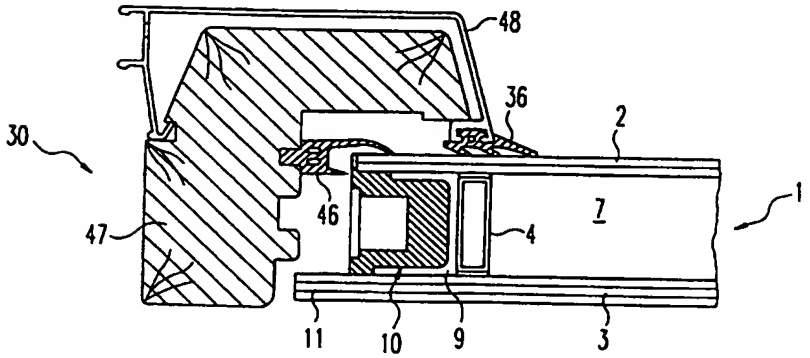

Fig. 7

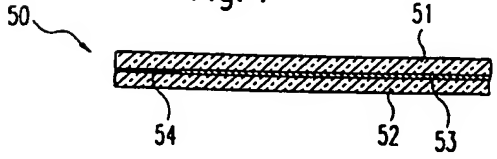

Fig. 8

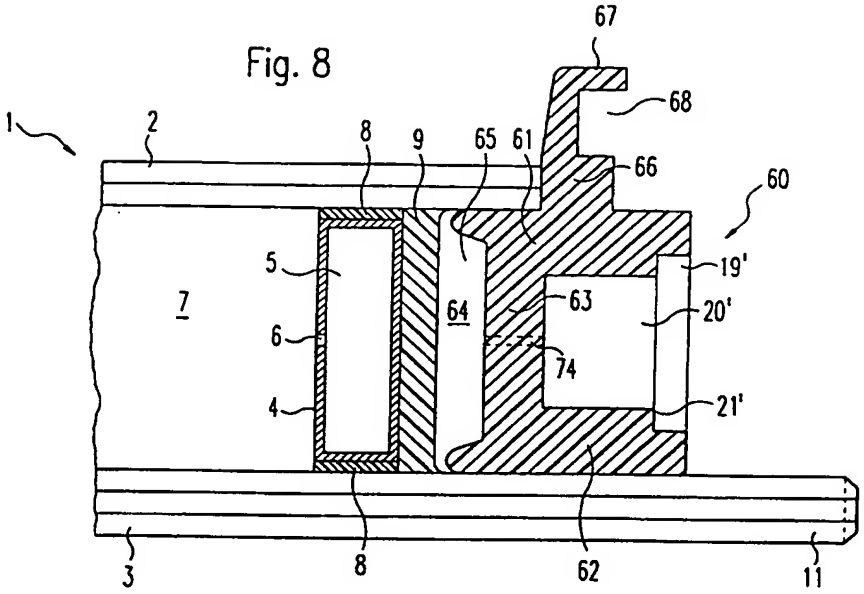
67
68
1
2
8
9
65
61
66
60
5
19'
7
64
63
20'
6
74
4
21'
3
8
62
11

Fig. 9

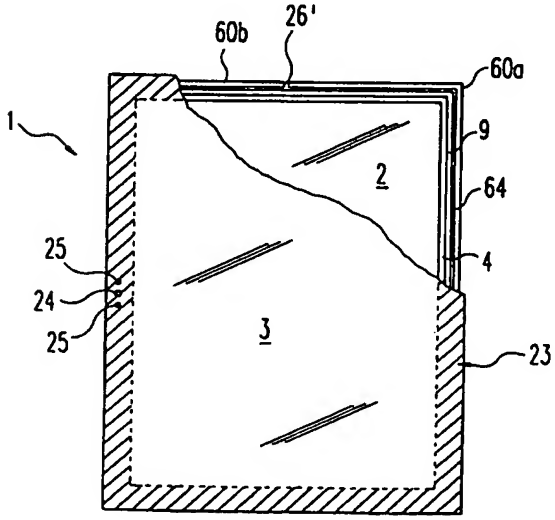
60b
26'
60a
1
9
2
64
25
4
24
25
3
23

Fig. 10

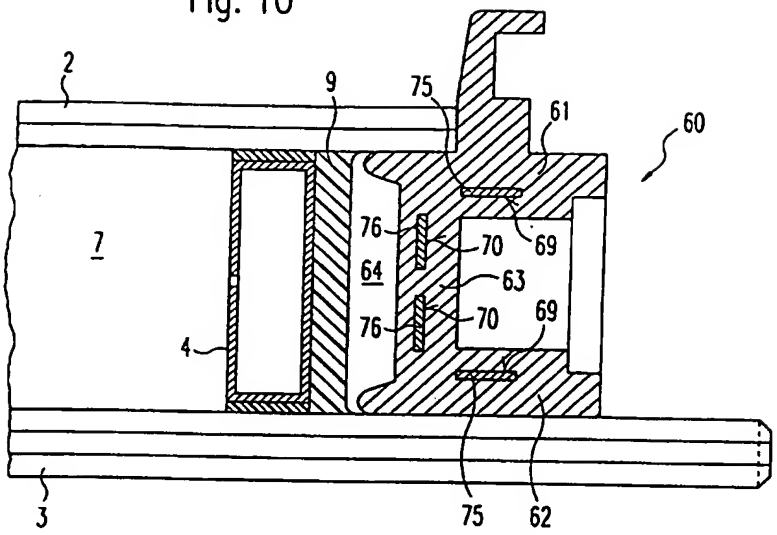
2
9
75
61
60
7
76
70
69
64
63
76
70
69
4
3
75
62

Fig. 11

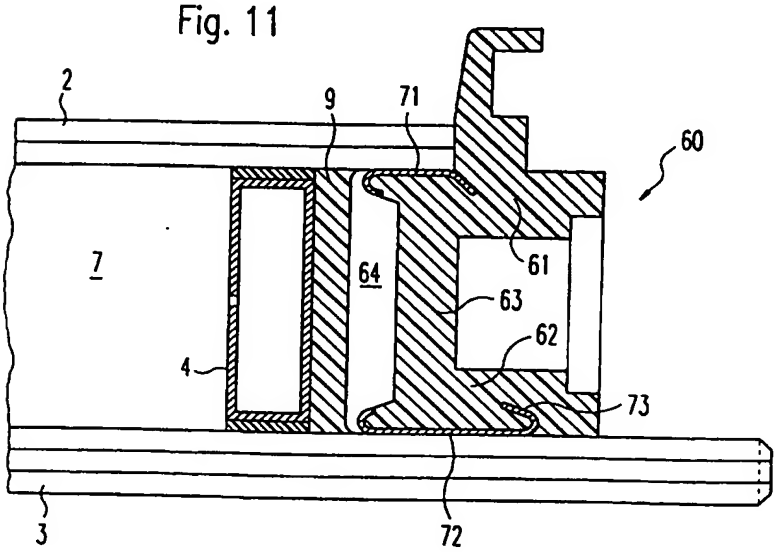
2
9
71
60
7
64
61
63
62
4
73
3
72

Fig. 12